

EXHIBITS SHOWING SOILS REPORT
(CONCLUSION - SAME AS OTHER SOILS IN AREA)

LDWSF

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07/31/2003



MEMORANDUM

2003

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TO: Elaine Adams: The Harris Bank N.A.
FROM: Dan Campbell, P.E. *DC*
DATE: July 31, 2003
GEI FILE: 10898-001-00
SUBJECT: Review of Soils Reports for Property Leased to Sabey

INTRODUCTION

This memorandum summarizes our review and interpretation of geotechnical reports that Carla Wigen of The Harris Bank N.A. (The Harris) provided to us regarding property located near Boeing Field in Seattle, Washington. The site in question is an industrial park located east of West Marginal Way South and south of 102nd Street South as shown on the attached Vicinity Map, Figure 1. The site has gone by the name of Oxbow Corporate Park and Riverfront Technical Park. The primary facilities include four one- to two-story industrial buildings with associated loading docks and paved parking as shown on the attached Site Plan, Figure 2.

Our services were requested and authorized by Ms. Wigen in a letter to GeoEngineers, Inc. (GEI) dated July 16, 2003. Our specific objective was to review the reports and determine / comment on the following:

1. What, if any, special requirements would be needed for a standard industrial building on property?
2. As a result of the underlying soil conditions, would any increased costs be necessary to construct a standard industrial building (distribution or light manufacturing use) on this site as compared to other industrial sites in South Seattle or the Kent Valley?
3. If the answer to Question No. 2 is yes, to what extent would increased costs be necessary?

EXISTING DATA

The Harris provided three geotechnical reports for the site prepared by Geotech Consultants between 1987 and 1988. We also reviewed seven additional geotechnical reports for the site that were prepared by GEI between 1995 and 2001. Specifics for these reports are included in the **Reference** section at the end of this memorandum. In addition to the site specific studies, GEI has completed geotechnical evaluations for over 100 distinct sites in the Duwamish and Green River Valley between Harbor Island in Seattle and the City of Kent. We relied heavily upon this experience for our interpretation of the subsurface conditions at the site in question and the likely impacts to development associated with those conditions.

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SITE CONDITIONS

SUBSURFACE CONDITIONS

Based on the reports reviewed, the site subsurface conditions can generally be described as consisting of fill over alluvial deposits. The average fill thickness was about 7 feet, and it generally consists of loose to medium dense, clean to silty sand. Below the fill, approximately 20 to 40 feet of loose/soft alluvial soils consisting of silty sand to silty clay were encountered. The alluvium grades to medium dense to dense below a depth of 30 to 50 feet. The groundwater table was encountered from 7 to 15 feet below the ground surface. In our opinion, these conditions are typical for the Duwamish and Green River Valley.

EXISTING FACILITIES

General

The subject industrial park facilities consist primarily of four one- to two-story buildings with associated loading docks and paved parking and drive areas as shown on the attached Site Plan. The three larger buildings are designated as Buildings 250, 251, and 252 in most of the reports referenced. A smaller building, often referred to as the Link Building in the documents, is situated between Building 250 and 252. Loading dock aprons are situated along the east side of Building 250 and the west side of Building 252. Specifics gleaned from the references reviewed and from property tax records for each of these facilities are presented below.

Building 250

- Constructed in 1987
- Concrete tilt-up/masonry structure
- Founded on shallow spread footings
- Single story warehouse – 342,000 square-feet (sf)

Building 251

- Constructed in 1987
- Concrete tilt-up/masonry structure
- Founded on shallow spread footings
- Two-story office building– 170,000 sf of office space with an approximately 85,000 sf footprint

Building 252

- Constructed in 1988
- Concrete tilt-up/masonry structure
- Founded on timber piles - unknown depth -- estimated at 30 to 35 feet based on geotechnical report
- Total area of 122,500 sf; high bay (east half) 79,000 sf; standard bay (west half) 43,500 sf
- Likely reason for pile foundations is larger loads in high bay area of building

Link Building

- Constructed between 1995 and 1998
- Concrete tilt-up/masonry structure
- Founded on 14-inch diameter augercast piles, unknown depth – estimated at 45 feet based on geotechnical report

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- One story with high bay – 37,000 sf
- Reason for pile foundation support was to minimize differential settlement between the new Link Building and the previously constructed buildings (250 and 252) that it connects. If the Link Building were placed on shallow spread footings, it would settle somewhat after construction while the neighboring buildings would not because they are pile supported (Building 252) or had already settled (Building 250).

Building 252 Loading Dock Apron

- Constructed between 1995 and 1998
- Concrete
- Founded on 14-inch diameter augercast piles, unknown depth – estimated at 30 to 35 feet based on geotechnical report
- Reason for pile foundation support was to minimize differential settlement between the new loading dock apron and the previously existing Building 252, which is supported on piles.

Building 250 Loading Dock Apron

- Constructed between 1995 and 1998
- Concrete
- Pre-load fill, founded at grade

CONCLUSIONS AND OPINIONS

QUESTION 1

What, if any, special requirements would be needed for a standard industrial building on property?

The fill and upper alluvial soils below the subject site, and most of the Duwamish and Green River Valley, are considered moderately compressible soils, and shallow foundations support is typically suitable only for relatively lightly loaded, one- and two-story buildings that can tolerate some settlement. Even for these structures, the sites are often pre-loaded with fill to pre-induce settlements that would otherwise occur below the building. Buildings with moderate to heavy loads and/or those sensitive to settlement typically require pile foundation support.

The portions of the fill and loose alluvium situated below the groundwater table are also susceptible to liquefaction during a large earthquake. Liquefaction refers to a condition where the soils temporarily lose strength during shaking and behave more like a viscous fluid than soil. Structures founded in or above liquefied soils are subject to potentially large differential settlement. The impacts of liquefaction can be mitigated to varying degrees by founding structures on deep foundations (piles), improving the ground so that the soils are no longer susceptible to liquefaction, and/or detailing the building so that it performs in a life safe manner should large differential settlements occur. Liquefaction was generally not a design consideration for most light industrial facilities in the area until the early to mid 1990s. Thus, most of the facilities constructed prior to this time did not consider the impacts or mitigation of those impacts in their design and construction. For newer structures, the cost of deep foundation systems or ground improvement solely to mitigate liquefaction impacts can often render a typical light industrial facility project non-viable. Thus, many of these newer facilities opt for structural detailing and other methods to ensure the building performs in a life safe manner.

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At the subject site, Buildings 250 and 251 are founded on shallow spread footings; we believe the building areas were likely preloaded prior to construction. These buildings were probably designed as lightly loaded structures that could tolerate some settlement. We deduce Building 252 is founded on piles because larger loads were anticipated for the high-bay portion of the building and shallow foundation support would have resulted in unacceptable settlement. The Link Building and the loading dock apron around Building 252 are pile supported because of the desire to minimize differential movement between the new and previously existing structures. If these facilities were constructed further away from the existing facilities, pile foundation support probably would not have been required.

QUESTION 2

As a result of the underlying soil conditions, would any increased costs be necessary to construct a standard industrial building (distribution or light manufacturing use) on this site as compared to other industrial sites in South Seattle or the Kent Valley?

In our opinion the subsurface conditions below the subject site are essentially the same as conditions found throughout the Duwamish and Green River Valley. Thus, the cost to construct a standard industrial building on the subject site (relative to the soil and groundwater conditions) is essentially the same as other sites in the valley.

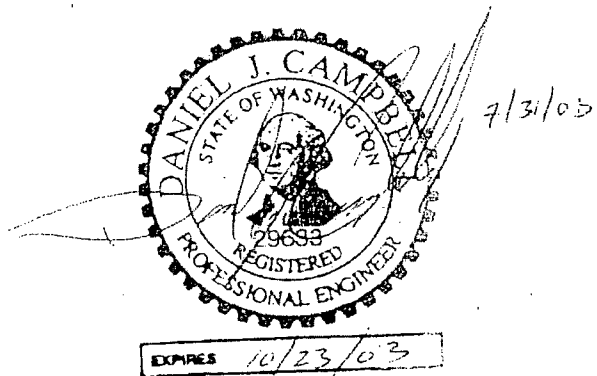
QUESTION 3

If the answer to Question No. 2 is yes, to what extent would increased costs be necessary?

Question is no longer applicable, in our opinion, since the answer to Question No. 2 was no.

Attachments: Figures 1 and 2

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REFERENCES

GeoEngineers, Inc.; September 8, 1995; "*Report, Geotechnical Engineering Services, Proposed Oxbow Corporate Park Improvements, Seattle, Washington;*" Consultant Report prepared for Sabey Corporation.

GeoEngineers, Inc.; November 20, 1995; "*Addendum Letter No. 2, Geotechnical Engineering Services, Proposed Oxbow Corporate Park Improvements, Seattle, Washington;*" Consultant Report prepared for Sabey Corporation.

GeoEngineers, Inc.; May 8, 1998; "*Report, Pile Installation, Loading Dock Modifications, Exodus Building, Riverfront Technical Park, Seattle, Washington;*" Consultant Report prepared for Sabey Corporation.

GeoEngineers, Inc.; August 30, 2000; "*Report, Geotechnical Engineering Services, Proposed USPS Distribution Center Number 10700, Tukwila, Washington;*" Consultant Report prepared for MC Squared, Inc.

GeoEngineers, Inc.; October 19, 2000; "*Report Addendum, Geotechnical Engineering Services, Proposed USPS Distribution Center Number 10700, Tukwila, Washington;*" Consultant Report prepared for MC Squared, Inc.

GeoEngineers, Inc.; May 21, 2001; "*Summary Report, Test Piles, Planned USPS Distribution Center Number 10700, Tukwila, Washington;*" Consultant Report prepared for MC Squared, Inc.

GeoEngineers, Inc.; July 27, 2001; "*Pile Cap LBD.5-LB2 Evaluation, Planned USPS Distribution Center Number 10700, Tukwila, Washington;*" Consultant Report prepared for MC Squared, Inc.

Geotech Consultants; January 28, 1987; "*Preliminary Geotechnical Engineering Study, 39.9 Acre Site, West Marginal Way and South 102nd Street, King County, Washington;*" Consultant Report prepared for Berkley Structures.

Geotech Consultants; April 10, 1987; "*Geotechnical Engineering Study, Oxbow Project Phase I, Boeing Office/Warehouse Buildings, King County, Washington;*" Consultant Report prepared for Berkley Structures.

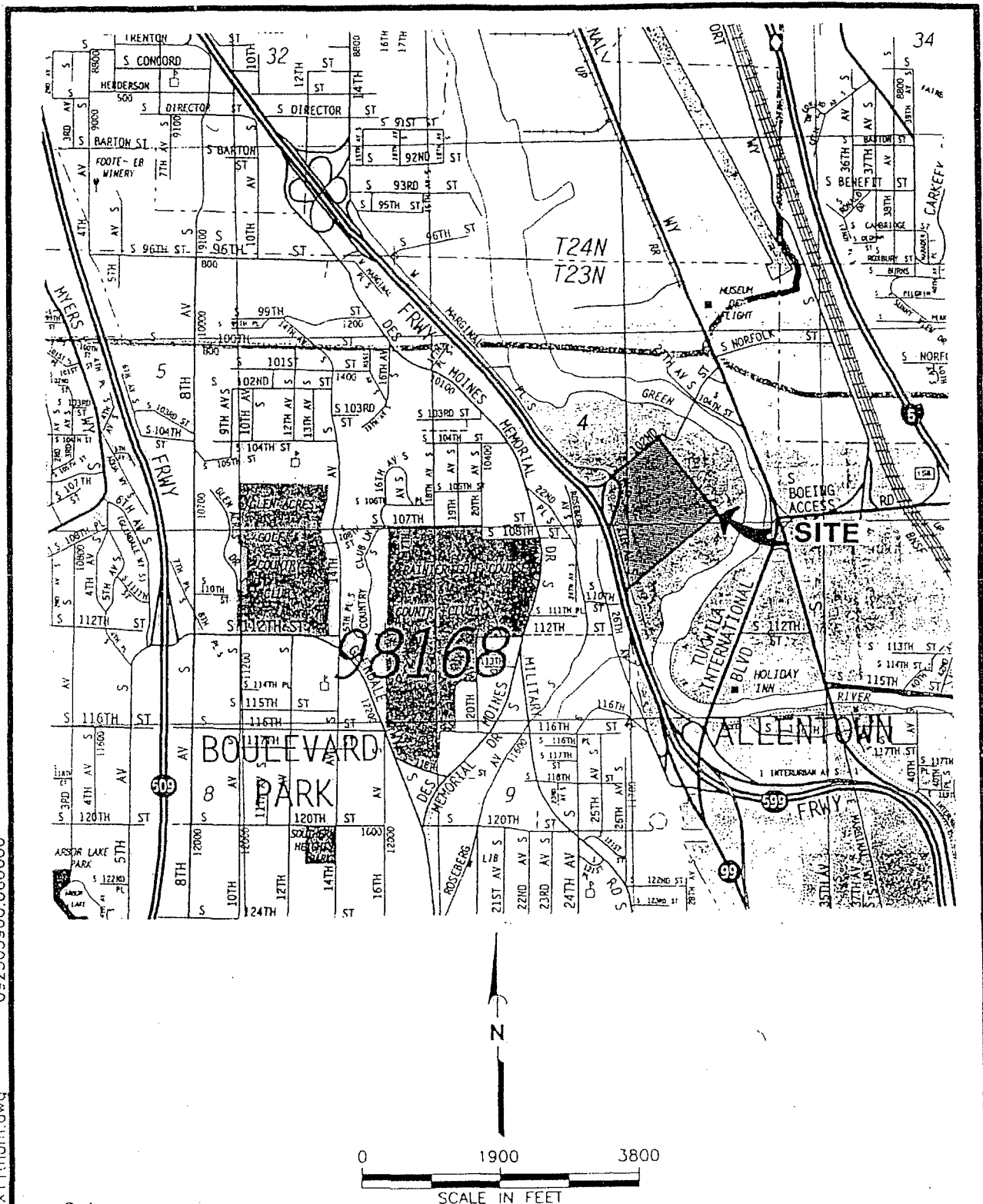
Geotech Consultants; May 9, 1988; "*Test Pile Driving, Proposed Office Building, Oxbow Office and Industrial Park, King County, Washington;*" Consultant Report prepared for Berkley Engineering & Construction.

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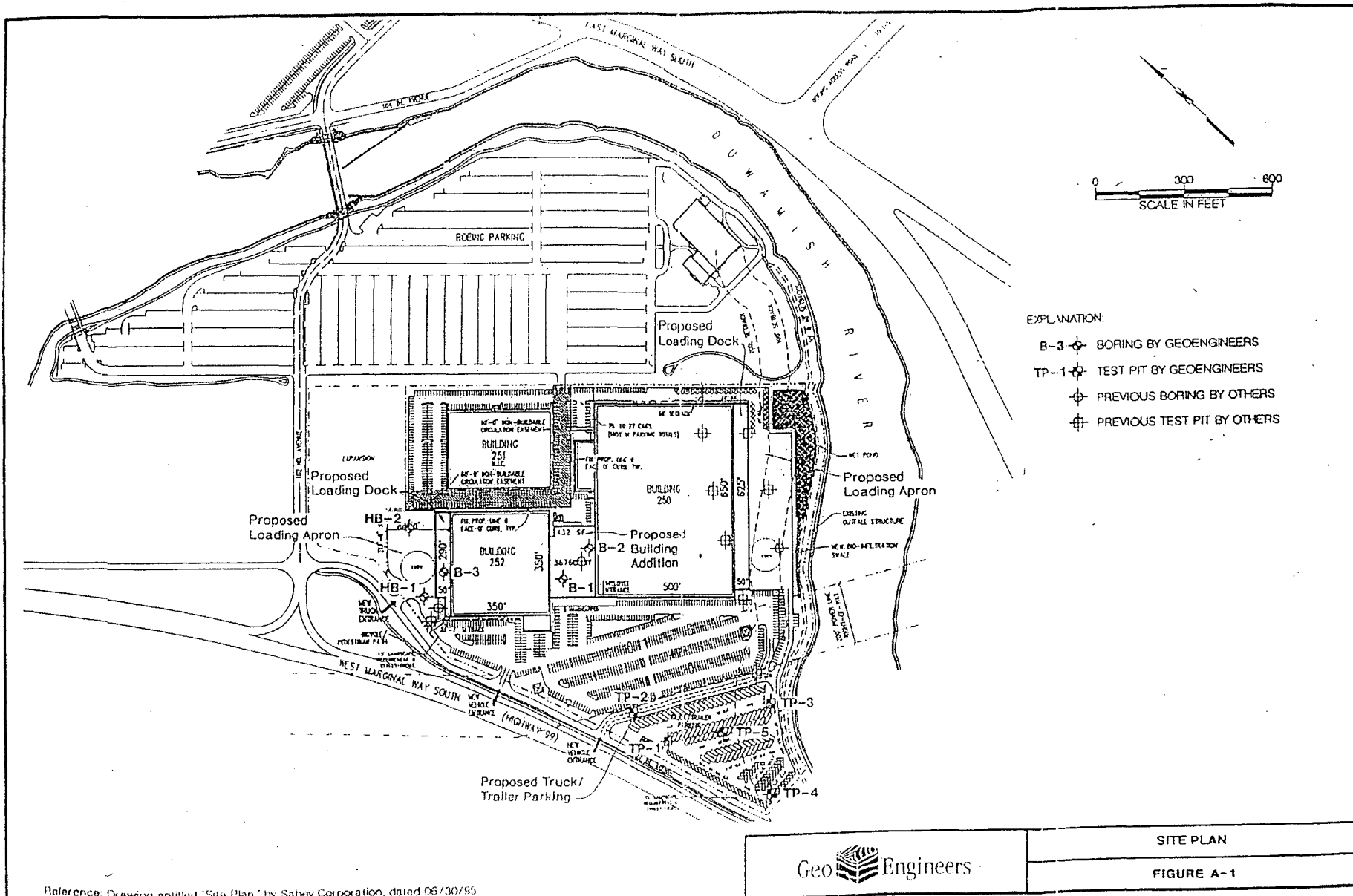
Reference:

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Geo  Engineers

VICINITY MAP

FIGURE 1



Subj: **FW: Review of Soils Reports for Property Leased to Sabey**
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wblock@buckgordon.com, Dave.Williams@THEHARRIS.COM
File: **Memo-01.pdf** (1296148 bytes) DL Time (36000 bps): < 10 minutes
Sent from the Internet (Details)

Hi all. Attached is the Sabey soils report. Gordon Buchan has reviewed the report on our behalf. In summary, the report tells us that the soil conditions are essentially the same as any other site in the area and that the property value should not be impacted by soil conditions. We now will hold onto this report and present it to the arbitrators/appraisers at the next Sabey rent adjustment negotiation. EPA

-----Original Message-----

From: Dan Campbell [<mailto:dcampbell@geoengineers.com>]
Sent: Thursday, July 31, 2003 7:57 PM
To: Wigen, Carla; Adams, Elaine
Subject: Review of Soils Reports for Property Leased to Sabey

Hello Carla and Elaine,

We completed our review of the soils reports that you provided for the subject property and have attempted to answer the questions that Carla posed in her July 16, 2003 letter to GeoEngineers. The attached memorandum summarizes our services. If you have any questions regarding the content of the memo or if we can be of additional service, please call. Also, please let me know if you would like me to mail a hard copy of the memo. Thank you for letting us help you on this project.

Dan Campbell, P.E.
GeoEngineers

425-861-6000

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